

20020721.qrp v02_n623.qrl.20020721

Date: Sun, 21 Jul 2002 19:03:05 EDT
From: qrp-l@Lehigh.EDU
To: "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Subject: QRP-L digest 2623

QRP-L Digest 2623

Topics covered in this issue include:

- 1) [130265] Re: 24 hr, UTC, WWVB Clock at Wal-Mart for \$12.56
by Bob Nielsen <nielsen@oz.net>
- 2) [130266] Data base for setting up schedules on 14.120
by Wayne Williams <aa5jj@yahoo.com>
- 3) [130267] Re: Linear amp biasing?
by ve3ab@mail.mondenet.com
- 4) [130268] Re: Norcal Paddles - 2nd Request
by "James R. Duffey" <jamesd1@flash.net>
- 5) [130269] Re: The Answer
by W2AGN <w2agn@w2agn.net>
- 6) [130270] Re: 24 hr, UTC, WWVB Clock at Wal-Mart for \$12.56
by "James R. Duffey" <jamesd1@flash.net>
- 7) [130271] Diode (1K60) Help
by Wayne AA5JJ <aa5jj@yahoo.com>
- 8) [130272] Re: 24 hr, UTC, WWVB Clock at Wal-Mart for \$12.56
by Tom Feeny <tfeeny@comcast.net>
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by "Tony Parks" <robert.parks11@gte.net>
- 10) [130274] Norcal Paddle Dimensions
by "William K. Harding" <k4ahk@ix.netcom.com>
- 11) [130275] 24 Hr. WWVB Clock
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- 12) [130276] Re: Offence under US code ...
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- 13) [130277] 1K60 Germanium diode, need one
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by Bill Coleman <aa4lr@arrl.net>
- 16) [130280] RE: 24 hr, UTC, WWVB Clock at Wal-Mart for \$12.56
by Karl Kanalz <kkanalz@gcecis.com>
- 17) [130281] 10k, 10 turn pot
by Oscar A Hoyt <k5ubs@juno.com>
- 18) [130282] W5KID
by "Rich Wilkerson" <richqrp@cox.net>
- 19) [130283] WTB SW-30+ update

- by <mgoins@usa.net>
- 20) [130284] VE3-bound
by David J Adams <david@theadamsclan.com>
- 21) [130285] Antenna Learning
by brad.mugleston@attbi.com
- 22) [130286] Re: Antenna Learning
by "Dennis Ponsness" <wb0wao@hotmail.com>
- 23) [130287] Some interesting threads on the front page of QRZ
by Wayne Scafe <WM-Scafe@wiu.edu>
- 24) [130288] Converting a NC40A to 80 meters
by "Ronald H. Evans" <rhevans@nc.rr.com>
- 25) [130289] Re: Balun for K-1
by "Karl F. Larsen" <k5di@zianet.com>
- 26) [130290] Re: Converting a NC40A to 80 meters
by "Ingo Meyer, DK3RED" <dk3red@t-online.de>
- 27) [130291] FT-817 and amp work
by "Karl F. Larsen" <k5di@zianet.com>
- 28) [130292] RE: Antenna Learning
by Nick Kennedy <nkennedy@tcainternet.com>
- 29) [130293] RE: Clear the air: Conjugate Primer
by Nick Kennedy <nkennedy@tcainternet.com>
- 30) [130294] OT Help?
by Bob W7AVK <rsrolfne@atnet.net>
- 31) [130295] Re: Balun for K-1
by "James R. Duffey" <jamesd1@flash.net>
- 32) [130296] RE: Clear the air: Conjugate Primer
by "Karl F. Larsen" <k5di@zianet.com>
- 33) [130297] Micro-80 kits
by "Oleg V. Borodin" <master72@lipetsk.ru>
- 34) [130298] Re: [QRPP-I] To: Oleg V. Borodin, RV3GM/QRP
by "Oleg V. Borodin" <master72@lipetsk.ru>
- 35) [130299] WTB-SW-30+ NEW
by <mgoins@usa.net>
- 36) [130300] Conjugate Primer - Spam law violations !
by Rick McKee <kc8aon@juno.com>
- 37) [130301] RE: Clear the air: Conjugate Primer
by W2AGN <w2agn@w2agn.net>
- 38) [130302] Good source for QRP Antenna wire.
by Rick McKee <kc8aon@juno.com>
- 39) [130303] Re: Antenna Learning
by "Bob Tellefsen" <n6wg@earthlink.net>
- 40) [130304] RE: Clear the air: Conjugate Primer
by William R Colbert <w5xe@juno.com>
- 41) [130305] 1:1 Balun at input of tuner - IT WORKS !
by Rick McKee <kc8aon@juno.com>
- 42) [130306] RE: Clear the air: Conjugate Primer
by "James R. Duffey" <jamesd1@flash.net>
- 43) [130307] Re: 1:1 Balun at input of tuner - IT WORKS !

by John Seboldt <k0jd-1@seboldt.net>
44) [130308] RE: Clear the air: Conjugate Primer
by "Karl F. Larsen" <k5di@zianet.com>
45) [130309] RE: Clear the air: Conjugate Primer
by W2AGN <w2agn@w2agn.net>
46) [130310] RE: 24 hr, UTC, WWVB Clock at Wal-Mart for \$12.56
by Tim Pettibone <k5oi@cox.net>
47) [130311] Re: 1:1 Balun at input of tuner - IT WORKS !
by Bill Coleman <aa4lr@arrl.net>
48) [130312] Re: Clear the air: Conjugate Primer
by "Steve Baker" <k8pz@earthlink.net>
49) [130313] Re: Antenna Learning
by Bill Coleman <aa4lr@arrl.net>
50) [130314] RE: Clear the air: Conjugate Primer
by Bill Coleman <aa4lr@arrl.net>
51) [130315] RE: Clear the air: Conjugate Primer
by Bill Coleman <aa4lr@arrl.net>
52) [130316] Re: Clear the air: Conjugate Primer
by "John Dorson" <jdorson@worldshare.net>
53) [130317] Re: 24 hr, UTC, WWVB Clock at Wal-Mart for \$12.56
by JD Delancy <W1JD@drix.net>
54) [130318] AOL 7.0 Compatible with posting to the list?
by NB6M@aol.com
55) [130319] Camping report from Pyramid Lake...(long)
by "Trevor Jacobs" <kg6cyn@earthlink.net>
56) [130320] Contest: CQC Goldrush - K7RE
by Brian Kassel <bkassel@mato.com>
57) [130321] Tuner basics
by "Karl F. Larsen" <k5di@zianet.com>
58) [130322] Re: Contest: CQC Goldrush - K7RE
by "Karl F. Larsen" <k5di@zianet.com>
59) [130323] Kenwood TS-50
by Fghester@aol.com

Date: Sat, 20 Jul 2002 16:07:27 -0700
From: Bob Nielsen <nielsen@oz.net>
To: Low Power Amateur Radio Discussion <qrp-1@lehigh.edu>
Subject: [130265] Re: 24 hr, UTC, WWVB Clock at Wal-Mart for \$12.56
Message-ID: <20020720230727.GA2206@oz.net>
Mime-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Disposition: inline

I don't have that model, but both the WWVB clocks I have allow you to turn the DST function off, so no changes are necessary when setting them to UTC (actually I only have the one in the shack set to UTC). I

suspect most of these clocks have the same chipset.

72, Bob N7XY

On Sat, Jul 20, 2002 at 03:05:08PM -0600, James R. Duffey wrote:

> I never thought that I would be a shill for that which epitomizes much of
> what wrong with US retailing today, but here goes.
>
> I purchased an Oregon Scientific model RM-103A clock at Wal-Mart today for
> \$12.56.. It sets itself to WWVB 6 times a day, has provisions for 24 hour
> readout, can be set to UTC, has seconds readout, and comes with a battery!
> The digits are large enough to read at a any distance by either a myope or
> presbyope. In short it has everything I want in a clock and is cheap. Now
> if it only had a Firewire, USB, or ethernet interface!
>
> It also shows the date which is nice as the most common error in DX QSLing
> is reporting local date rather than UTC date. It also shows the year, but I
> am usually not that out of touch with reality.
>
> It indicates that WWVB has a strong signal here and set itself (to Pacific
> time) after several minutes. Neat!
>
> The seconds display is nice for satellite work.
>
> It says it sets itself to Daylight Savings Time, so I suppose I will have to
> set it back to UTC twice a year. I am going to tape the instructions on the
> back so I remember how to do it.
>
> At the Wal-Mart I went to, they were located in a special display. They also
> had an orthogonal (black instead of silver, vertical instead of horizontal)
> model available with the same features at the same price. -Dr. Megacycle
> KK6MC/5
> --
> James R. Duffey KK6MC/5
> Cedar Crest, NM DM65
>

--

Bob Nielsen, N7XY
Bainbridge Island, WA
IOTA NA-065, USI WA-028S

n7xy@n7xy.net

Date: Sat, 20 Jul 2002 16:34:14 -0700 (PDT)
From: Wayne Williams <aa5jj@yahoo.com>
To: Code Talk <codetalk@yahoogroups.com>,
Low Power Amateur Radio Discussion <qrp-1@lehigh.edu>

Subject: [130266] Data base for setting up schedules on 14.120
Message-ID: <20020720233414.92824.qmail@web10508.mail.yahoo.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii

Here is the link to the Data base for setting up
schedules on 14.120 CW practice, take a look and add
yours.

73 Wayne AA5JJ

PS: 14.120 is where we are trying to operate now but
we will move up and down the band a little so tune
around and listen, or call CQ.

Do You Yahoo!?
Yahoo! Health - Feel better, live better
<http://health.yahoo.com>

Date: Sat, 20 Jul 2002 19:53:48 +0000
From: ve3ab@mail.mondenet.com
To: "Low Power Amateur Radio Discussion" <qrp-1@lehigh.edu>,
w2eb@twcnny.rr.com
Subject: [130267] Re: Linear amp biasing?
Message-ID: <200207202355.g6KNtq315047@mail.mondenet.com>
MIME-Version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7BIT

I have a file folder of solid state linear amps and QRP booster
circuits..let me know what transistors ..and configuration..or what
article you built it up from ..and maybe i could come up with some
figure. Most of my articles are from QST,HR and 73.
Another way is to get the data sheets and application sheets for the
transistor ..and check out the specs. I have access to many data
sheets at work.

I have an amplifier strip using a pair of transistors ..it is a
strip from an old defunct IC720. The manual calls up a bias current
of 600 ma. I cant recall what my Ten Tec 405 amp bias is..but as a
rough guess..I would say..maybe 300 Ma?..my 405 puts out roughly 1/2
the power. 73 earl VE3AB

Date: Sat, 20 Jul 2002 17:58:28 -0600
From: "James R. Duffey" <jamesd1@flash.net>
To: <qrp-1@lehigh.edu>
Subject: [130268] Re: Norcal Paddles - 2nd Request
Message-ID: <B95F5544.196CC%jamesd1@flash.net>
Mime-version: 1.0
Content-type: text/plain; charset="US-ASCII"
Content-transfer-encoding: 7bit

I don't know why I received an english version of the NorCal Paddles and Chuck received a metric version, but my base measures:

2 7/8" (W) x 2 3/8" (D)

I'll bet that metric verison commands a premium - Dr. Megacycle K6MC/5

--

James R. Duffey KK6MC/5
Cedar Crest, NM DM65

Date: Sat, 20 Jul 2002 19:59:06 -0400
From: W2AGN <w2agn@w2agn.net>
To: Low Power Amateur Radio Discussion <qrp-1@lehigh.edu>
Subject: [130269] Re: The Answer
Message-ID: <3D39C10A.14115.AFC95EF@localhost>
MIME-version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7BIT
Content-description: Mail message body

On 20 Jul 2002 at 15:56, Karl F. Larsen wrote:

>
> In summary, conservation of energy explains everything. This may
> not be real clear without pictures. But I know exactly what the pictures

The picture I have is Karl, with his FT-817 conjugately matched to his EH antenna, trying to hear a weak signal through the ear wax.

In my picture, Karl looks a little like Jim Carrey.

--

/ \ / \ / \ / \ / \ John L. Sielke

(W)(2)(A)(G)(N) <http://www.w2agn.net>
 / _/_ _/_ _/_ _/_ ARCI, NJQRP, ARQrp, GQRP, RSGB
Ex- K3HLU, W7JEF, W4MPC, N4JS

Date: Sat, 20 Jul 2002 18:16:04 -0600
From: "James R. Duffey" <jamesd1@flash.net>
To: <qrp-1@lehigh.edu>
Subject: [130270] Re: 24 hr, UTC, WWVB Clock at Wal-Mart for \$12.56
Message-ID: <B95F5963.196CF%jamesd1@flash.net>
Mime-version: 1.0
Content-type: text/plain; charset="US-ASCII"
Content-transfer-encoding: 7bit

Thanks Bob, I will check on that. - Duffey

--

James R. Duffey KK6MC/5
Cedar Crest, NM DM65

Date: Sat, 20 Jul 2002 17:36:31 -0700 (PDT)
From: Wayne AA5JJ <aa5jj@yahoo.com>
To: Code Talk <codetalk@yahoogroups.com>,
Low Power Amateur Radio Discussion <qrp-1@lehigh.edu>
Subject: [130271] Diode (IK60) Help
Message-ID: <20020721003631.49694.qmail@web10502.mail.yahoo.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii

I am looking for a diode it is eather the (IK60) or
the (1K60) I am not sure can anyone help me with this
or mabey have one, it is used in my antenna tunner and
is on the circuit board for the meter to show SWR.
Thanks to all that read this wheather you can help or
not.

73 Wayne AA5JJ

Do You Yahoo!?
Yahoo! Health - Feel better, live better
<http://health.yahoo.com>

Date: Sat, 20 Jul 2002 20:33:46 -0400
From: Tom Feeny <tfeeny@comcast.net>
To: *QRP-L <qrp-l@lehigh.edu>
Subject: [130272] Re: 24 hr, UTC, WWVB Clock at Wal-Mart for \$12.56
Message-ID: <002401c2304e\$5bcf74a0\$3a5c2044@waldlk01.mi.comcast.net>
MIME-version: 1.0
Content-type: text/plain; charset=iso-8859-1
Content-transfer-encoding: 7BIT

Alas, all Wal-Marts are not equal. Our local store has an "Atomix" brand for 25 bux and doesn't seem have UTC or 24 hour features.
Tom

> I purchased an Oregon Scientific model RM-103A clock at Wal-Mart today for
> \$12.56.. It sets itself to WWVB 6 times a day, has provisions for 24 hour
> readout, can be set to UTC, has seconds readout, and comes with a battery!
> The digits are large enough to read at a any distance by either a myope or
> presbyope. In short it has everything I want in a clock and is cheap.

Date: Sat, 20 Jul 2002 20:09:18 -0500
From: "Tony Parks" <robert.parks11@gte.net>
To: "Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [130273] Balun for K-1
Message-ID: <001d01c23053\$3e292d60\$3812f143@3dse0>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Comments and data from Tom Hammond and James Duffey made me interested in trying a 1:1 choke balun made with 6 turns of coax on a 4.5 inch diameter form. My version is made with six turns of mini 8/u in a single-layer on a cardboard form 4.5 inches in diameter. Slightly more than one foot of coax comes from one end of the balun into the K1 antenna connector.

The antenna is a 40 meter horizontal delta loop feed at one corner with 20 feet of homemade ladder line to the balun located one foot from my K1. Auto tune with the K1's ATU gives the following K1 indicated SWR readings: 1.4:1 at 7.04MHz, 1.8:1 at 10.116 MHz, 1.5:1 at 14.060 MHz and 1.3:1 at 21.060 MHz. Not quite as good as the readings I get when I use a Radio Works 4:1 current balun (B4-2KX), expecially on 30 meters.

Any comments would be appreciated.

Tony
KB9YIG

Date: Sat, 20 Jul 2002 20:54:25 -0400
From: "William K. Harding" <k4ahk@ix.netcom.com>
To: "QRP-L Mail" <qrp-l@lehigh.edu>
Subject: [130274] Norcal Paddle Dimensions
Message-ID: <E17W5SS-000701-00@smtp10.atl.mindspring.net>
Mime-version: 1.0
Content-type: text/plain; charset="US-ASCII"
Content-transfer-encoding: 7bit

Thanks to one and all who sent me the dimensions of the Norcal and Vibroplex paddles base plates. There seems to be some variation from unit to unit, but, most are a little less than 3 inches (7.62 cm) wide.

Bill - K4AHK

Date: Sun, 21 Jul 2002 01:32:46 -0000
From: "WI8W" <wi8w@arrl.net>
To: "QRP-L" <qrp-l@lehigh.edu>
Subject: [130275] 24 Hr. WWVB Clock
Message-ID: <00e201c23056\$84c1a880\$6401a8c0@attbi.com>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

I just got back from Walmart but they did not have the Oregon Scientific RM-103A but did have several other models from that company. They also had the Sharp Tech Atomic Clock for \$12.96. It has 24 Hour capability and large 1.25 inch digits seconds readout, Month and date. This is the one I chose for my station to replace my still working Micronta that I bought in 1980.

73

Thom WI8W

Date: Sat, 20 Jul 2002 20:37:42 -0500
From: Ted Kell <tedkell@ev1.net>
To: qrp-1@lehigh.edu
Subject: [130276] Re: Offence under US code ...
Message-ID: <20020720204018.SM00584@default>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

There is a web site out there someplace, I was laughing hard I didn't bookmark it, that speaks of the fun time that was had at the expense (really) of a couple of these guys. One person was said to have actually managed to get one of these spammers to send HIM a buck. Honest. I really wish I still had the reference.

N3Ted

7/19/02 6:25:52 PM, na5n@zianet.com wrote:

>
>W2AGN writes: (well, quoted from received SPAM)
>
>> > > REPUBLIC OF COTE D'IVIORE, WEST AFRICA.
>> > >
>> > > DEPARTMENT CAME ACROSS THE SUM OF FOURTEEN MILLION
>> > > UNITED STATES DOLLARS(US\$14,000,000)ONLY BELONGING TO
>> > > AN INTERNATIONAL BUSINESSMAN WHO DIED ALONG WITH HIS
>> > > NEXT OF KIN IN THE 5TH NOVEMBER,1997 AEROPLANE CRASH
>> > > IN ABIDJAN IN WEST AFRICA.
>
>Boy, did you get ripped!!! This same email I got was for \$40 million,
>not a measly \$14 mil. I answered that if his entire family wasn't a
>bunch of crack-smoking, dope-headed losers, maybe his dad wouldn't have
>crashed the %\$#@ plane in the first place. I actually got an answer
>assuring me this was sincere, not spam, with a huge cry baby story about
>his family. I told him a family filled with such jerks and losers with
>suddenly \$40 million to spend was a truly scary thought. Get a life.
>
>The point is ... there are SOME things you can do to avoid spam, but it's
>gonna happen no matter what filters and firewalls you build. So either
>delete the darn things or have fun with the jerks ... in those RARE cases
>where your reply actually gets through to a valid address. If I do get
>through the first time, I have a really nice 38Meg file I send along the
>second. It only takes 2 seconds to delete the things, and probably
>months actually trying to get some legal action to stick.

>
>72, Paul NA5N
>
>
>

Date: Sat, 20 Jul 2002 18:55:07 -0700 (PDT)
From: Wayne AA5JJ <aa5jj@yahoo.com>
To: Code Talk <codetalk@yahoogroups.com>,
Low Power Amateur Radio Discussion <qrp-1@lehigh.edu>
Subject: [130277] 1K60 Germanium diode, need one
Message-ID: <20020721015507.10549.qmail@web10504.mail.yahoo.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii

OK I found out what the diode is and it is a
1K60 Germanium diode
if you have a couple in your junk box I sure would
like to have them, the radio shack here is not much it
is local owned and you have to order anything they do
not stock hardly any parts so if you have a couple I
sure would appreciate them. will pay a little for them
in need be.
73 Wayne AA5JJ

Do You Yahoo!?
Yahoo! Health - Feel better, live better
<http://health.yahoo.com>

Date: Sat, 20 Jul 2002 22:00:46 -0400
From: Bill Coleman <aa4lr@arrl.net>
To: <k5di@zianet.com>,
"Low Power Amateur Radio Discussion" <qrp-1@lehigh.edu>
Subject: [130278] Re: Clear the air
Message-ID: <20020721020218.EZCI21884.imf10bis.bellsouth.net@[192.168.0.20]>
Mime-Version: 1.0
Content-Type: text/plain; charset="US-ASCII"

On 7/20/02 8:10 AM, Karl F. Larsen at k5di@zianet.com wrote:

>
> I know for a fact that my radios, all with transistor (or FET)
> finals need to see approx. 50 ohms resistive to load up to rated power.

OK.

> I have a couple of MFJ 300 watt tuners that have 4:1 baluns in
> them and a T type tuner configuration. I have a home made (from a Dan's
> Small Parts kit) T type tuner with a 1:1 balun good for QRP power.

OK

> I have an 88 foot wire fed in the middle with 450 ohm ribbon.
> The feedline is about 50 feet long.

OK

> When the radio is hooked to a tuner with RG-59 coax, and the
> antenna is hooked to the balun and the balun is hooked to the T type
> tuner I can get 1:1 match to the radio by setting 2 caps and an inductor
> to the proper values.

You sure that isn't RG-58 coax? RG-59 is 75 ohm, and isn't an efficient
way to carry a 50 ohms resistive impedance to the transmitter.

> I'm sure the radio to tuner connection is conjugate matching
> since it must be to achieve 1:1 SWR.

Indeed, but that isn't the side of the tuner that we've been talking
about for the last week or so. The side that is interesting is the side
that connects to the antenna.

> What type of matching to the antenna is my problem.

Well said. Your problem.

> Maxwell says it's also conjugate matching.

YES!

> If so that means the impedance at the
> output of the tuner is a pure resistance, the value of which I don't
> know, but it's not likely to be 450 ohms. And at every 1/2 wave up the
> feedline it's again pure resistance.

NO!

The output of the tuner is NOT likely to be a pure resistance. The output of the tuner is very likely to have a reactive component.

However, the reactive component from the tuner is exactly cancelled by the reactive component from the antenna, as transformed by the feedline.

I think this is the point you're missing, Karl. That 88 foot doublet is going to have a complex impedance on every ham band. (Well, maybe not on 60m, but we don't got that band yet) That complex value is going to dance around a Smith Chart circle as it slides back toward the tuner.

We don't get rid of that complex impedance at the tuner. It still exists. At any point if you cut the feedline and measure, you'll find a complex impedance. What the tuner does is to balance that complex impedance, by feeding the same complex impedance with opposite sign. So at each point, the reactive components cancel.

Without a reactive component, the condition of resonance is achieved.

It's like a string hooked to a machine so it vibrates -- if you feed the exact opposite vibration, the string will look like it is standing still. In reality, the original waves and your cancelling wave are there -- but their sum is no motion. Hence, no reactive component.

> This condition is called by some as resonace. I don't understand
>why that defines resonance.

How do you define resonance?

> I'm on page 9 of the 68 page Maxwell paper. I have to check the
>library at NMSU and see if they have a book I need and run by the School
>Book Store and see if they still sell Smith Charts. They used to.

Really, Karl, if you'll just take what I've told you at face value, then you won't need all these supplies.

Bill Coleman, AA4LR, PP-ASEL Mail: aa4lr@arrl.net
Quote: "Not within a thousand years will man ever fly!"
 -- Wilbur Wright, 1901

Date: Sat, 20 Jul 2002 22:19:28 -0400
From: Bill Coleman <aa4lr@arrl.net>
To: <wf7i@hotmail.com>,

"Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [130279] Re: Clear the air
Message-ID: <20020721022101.IJCA1218.imf13bis.bellsouth.net@[192.168.0.20]>
Mime-Version: 1.0
Content-Type: text/plain; charset="US-ASCII"

On 7/20/02 12:48 PM, Bert Herald at wf7i@hotmail.com wrote:

>First, I'm not sure I understand the buzzword "conjugate matching", but if I
>am to assume that this simply means matching by coming up with the complex
>conjugate of the impedance of the circuit to-be-matched, ie, complex conjugate
>of $R - jX = R + jX$, which when cascaded in series yields just R as an
>equivalent, then isn't this just everyday ordinary matching? I don't see
>anything particularly special about this (maybe I'm missing something?).

The interesting thing is the conjugate condition exists at every point on the feedline, and all the way onto the antenna.

>Also, why would the impedance of the output of the tuner be a pure
>resistance? It can't with 1:1 SWR at the rig unless the antenna-feed system
>is also a pure resistance (and then you wouldn't need a tuner to begin
>with!).

It could be a pure resistance with a value other than 50 ohms!

>You can either put in an impedance ("conjugate") transformation at the
>antenna terminals or at the output of your rig to make the entire system
>appear resonant at the rig's output. Most people prefer to have a purely
>resistive near-to-50 ohm feedpoint at the antenna end for a variety of
>reasons, which I don't quite feel confident enough right now to attempt to
>thoroughly explain! I believe one reason is to prevent RF from radiating
>off the feedline.

NO! 50 ohm impedances have NOTHING to do with feedline radiation.

Feedline radiation is due to unbalanced currents in the feed. This is true of both so-called balanced and unbalanced line. If there are common mode currents, the feedline may radiate. If there are only differential currents, then the feedline cannot radiate.

50 ohm impedances are important when working with 50 ohm coax, which is common. Coax is a moderately lossy feedline in the matched condition -- the losses compound when there is a mismatch between the feedline and the antenna.

Since the coax dielectric losses are negligible at HF, the losses are virtually all resistive in nature. The stem from the relatively small center conductor, and the high RF currents needed to convey power in a 50

ohm impeance.

>I believe, but am not able to prove at the moment, that the "ideal"
>antenna/feed system is one in which the antenna feedpoint is pure resistive
>without need of any type of match, and of course the feedline and output
>impedance of the rig is also pure resistance (and all three are the SAME
>resistance!). This way, maximum efficiency is achieved in the system.

This is what we attempt to achieve with modern 50 ohm rigs, 50 ohm coax
and 50 ohm antennas.

Efficiency, however, has nothing (directly) to do with impedance. You get
efficiency by eliminating loss. I noted above that coax is moderately
lossy. We tolerate it's lossy nature because it is so doggone convenient
to use.

I'll save my efficiency diatribe for another thread....

Bill Coleman, AA4LR, PP-ASEL Mail: aa4lr@arrl.net

Quote: "Not within a thousand years will man ever fly!"

-- Wilbur Wright, 1901

Date: Sat, 20 Jul 2002 21:12:34 -0500
From: Karl Kanalz <kkanalz@gcecispc.com>
To: "'jamesd1@flash.net'" <jamesd1@flash.net>,
 Low Power Amateur Radio Discussion <qrp-1@lehigh.edu>
Subject: [130280] RE: 24 hr, UTC, WWVB Clock at Wal-Mart for \$12.56
Message-ID: <01C23034.2BB7E5A0@KKANALZ>

That's a bargain price, James! I think you'll find, however,
that selection of whether or not "Daylight Savings Time"
is implemented is user-selectable.

That's why I have TWO "atomic clocks" in my shack -
one set for GMT (without DST set/reset) and the other
one is set for local time WITH the automatic Daylight
Savings Time option "enabled".

Works like a charm thata'way!

Karl K - W8TIF
McKinney, Texas

-----Original Message-----

From: James R. Duffey [SMTP:jamesd1@flash.net]
Sent: Saturday, July 20, 2002 4:05 PM
To: Low Power Amateur Radio Discussion
Subject: 24 hr, UTC, WWVB Clock at Wal-Mart for \$12.56
<snip>

It says it sets itself to Daylight Savings Time, so I suppose I will have to set it back to UTC twice a year. I am going to tape the instructions on the back so I remember how to do it.

At the Wal-Mart I went to, they were located in a special display. They also had an orthogonal (black instead of silver, vertical instead of horizontal) model available with the same features at the same price. -Dr. Megacycle
KK6MC/5

--

James R. Duffey KK6MC/5
Cedar Crest, NM DM65

Date: Sat, 20 Jul 2002 21:52:06 -0500
From: Oscar A Hoyt <k5ubs@juno.com>
To: qrp-l@lehigh.edu
Subject: [130281] 10k, 10 turn pot
Message-ID: <20020720.215215.-514181.0.k5ubs@juno.com>
MIME-Version: 1.0
Content-Type: text/plain
Content-Transfer-Encoding: 7bit

Someone wanted a 10 turn 10k if I remember correctly.. I deleted the message earlier and when putting some parts up I came across one (1). If this is the correct value that you need we can work out something.. It has a plastic shaft, body just under 3/4 in. long and about 7/8 in. dia. Please only the person looking for one respond.

e-mail k5ubs@juno.com

Oscar Hoyt, ham since '55, K2 # 2264, ARRL, QCWA, QRP-L 1733, ARCI,
NORCAL, SOC # 303 303

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Date: Sat, 20 Jul 2002 20:31:27 -0700
From: "Rich Wilkerson" <richqrp@cox.net>
To: "Low Power Amateur Radio Discussion" <qrp-1@lehigh.edu>
Subject: [130282] W5KID
Message-ID: <000701c23067\$19d52900\$945a0844@cx55215a>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Has anyone heard W5KID tonight? if so where ?

Thanks, Rich, WD6FDD

Date: Sat, 20 Jul 2002 22:33:55 -0500
From: <mgoins@usa.net>
To: <qrp-1@lehigh.edu>
Subject: [130283] WTB SW-30+ update
Message-ID: <20020721033355.19568.qmail@uwdvg007.cms.usa.net>
Mime-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: quoted-printable

Thanks to all who emailed. Found one living in Nebraska that will soon be=
in
Texas (and on the front of a bicycle). =

Thanks.

mike
wb5yjx

Date: Sun, 21 Jul 2002 00:27:37 -0400
From: David J Adams <david@theadamsclan.com>
To: n9uxu@yahoo.com
Cc: Low Power Amateur Radio Discussion <qrp-1@lehigh.edu>
Subject: [130284] VE3-bound
Message-ID: <3D3A3839.3000305@theadamsclan.com>
MIME-Version: 1.0

Content-Type: text/plain; charset=us-ascii; format=flowed
Content-Transfer-Encoding: 7bit

Greetings! Headed out to a cabin in Combermere, Ontario. The K-1, NC-20, and MP-1 are coming with me, so listen for n9uxu/ve3 on 80-20.

73 de dave, n9uxu/8

Date: Sat, 20 Jul 2002 23:42:55 -0600 (MDT)
From: brad.mugleston@attbi.com
To: Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>
Subject: [130285] Antenna Learning
Message-ID: <Pine.LNX.4.44.0207202330170.3143-100000@mugleston.mugs.net>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Went to the Swapfest in Loveland today, Picked up some 300 ohm twin lead window stuff. Now I want to build an antenna using some of this wire.

I enjoy 40, 30 & 20 meters (gee, that matches the radios I have).

Now for the question - all the tuners I have take coax. I know I need a balun but I've never made one before. I've got a Yellow toroid I purchased once before to do this same thing but don't know where to start.

I've got an old antenna book and an old manual. I think I'm looking for a 6:1 transformer but most I see are 1:1 and 4:1.

I'm lost.

Thanks,

Brad

Date: Sun, 21 Jul 2002 06:34:24 +0000
From: "Dennis Ponsness" <wb0wao@hotmail.com>
To: brad.mugleston@attbi.com, qrp-l@lehigh.edu
Subject: [130286] Re: Antenna Learning
Message-ID: <F232W92puRt1HKdDZVM000195aa@hotmail.com>
Mime-Version: 1.0
Content-Type: text/plain; format=flowed

Brad - A 4:1 will work just fine. The NJQRP club has a 4:1 balun kit on their website. I think it is only \$15, so go check it out. Have fun with the new antenna when you get it up and running!

72 es oo

Dennis - WB0WAO

NJQRP #329
FPQRP #-347
SOC #499
FISTS # 9299
GACW #622

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<http://www.hotmail.com>

Date: Sun, 21 Jul 2002 09:44:29 +0100
From: Wayne Scace <WM-Scace@wiu.edu>
To: "low Power Amateur Radio Discussion" <qrp-1@lehigh.edu>
Subject: [130287] Some interesting threads on the front page of QRZ
Message-ID: <5.1.0.14.0.20020721094340.02c00ec8@POP3.wiu.edu>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"; format=flowed

Hi Gang,

Wayne K9DI es Sequoia here. I just thought I'd pass along some threads on the front page of www.qrz.com that some of U might want to jump in on. Most memorable moment in ham radio, Digital FD, Building is FUN, What's the WORST rig U've ever had just to name a few...Just thought I'd share, I've had a blast following 'em
73/72 es M00/00 ..

Respectfully and Sincerely Yours,

Wayne M. Scace

k9di@arrl.net
k9di@qsl.net
LICQ# 315313
FISTS# 4409
QRP-L# 2313

QRPP-L# 243
FPQRP-L# 217
SOC# 452
ARS # 1,082
Zombie # 800
<http://www.qsl.net/k9di>

Date: Sun, 21 Jul 2002 06:42:42 -0400
From: "Ronald H. Evans" <rhevans@nc.rr.com>
To: qrp-l@lehigh.edu
Subject: [130288] Converting a NC40A to 80 meters
Message-ID: <E17WEAk-0000J4-00@computer100>
Content-Type: text/plain;
 charset="iso-8859-1"
MIME-Version: 1.0
Content-Transfer-Encoding: 8bit

I have not used my NC40A since I obtained a DSW-40. The manual mentions a simple conversion to 80 meters. Has anyone performed this conversion and how did it work?
72, Ron, K4KTB

Date: Sun, 21 Jul 2002 05:06:29 -0600 (MDT)
From: "Karl F. Larsen" <k5di@zianet.com>
To: Tony Parks <robert.parks11@gte.net>
Cc: Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>
Subject: [130289] Re: Balun for K-1
Message-ID: <Pine.LNX.4.44.0207210504040.1628-100000@Daisy.dog>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Tony I much prefer a toroid wound balun and am leaning hard toward one that's wired for 1:1 impedance ratio. The choke balun takes a lot of coax and I have never got it to work as well.

On Sat, 20 Jul 2002, Tony Parks wrote:

> Comments and data from Tom Hammond and James Duffey made me interested in
> trying a 1:1 choke balun made with 6 turns of coax on a 4.5 inch diameter
> form. My version is made with six turns of mini 8/u in a single-layer on a

> cardboard form 4.5 inches in diameter. Slightly more than one foot of coax
> comes from one end of the balun into the K1 antenna connector.
>
> The antenna is a 40 meter horizontal delta loop feed at one corner with 20
> feet of homemade ladder line to the balun located one foot from my K1. Auto
> tune with the K1's ATU gives the following K1 indicated SWR readings:
> 1.4:1 at 7.04MHz, 1.8:1 at 10.116 MHz, 1.5:1 at 14.060 MHz and 1.3:1 at
> 21.060 MHz. Not quite as good as the readings I get when I use a Radio
> Works 4:1 current balun (B4-2KX), especially on 30 meters.
>
> Any comments would be appreciated.
>
> Tony
> KB9YIG
>
>

--
Yours Truly,

- Karl F. Larsen, (505) 524-3303 -

Date: Sun, 21 Jul 2002 13:25:03 +0200
From: "Ingo Meyer, DK3RED" <dk3red@t-online.de>
To: QRP-L <qrp-l@lehigh.edu>
Subject: [130290] Re: Converting a NC40A to 80 meters
Message-ID: <3D3A9A0F.49F8F054@t-online.de>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Hello Ron,

> I have not used my NC40A since I obtained a DSW-40. The manual mentions a
> simple conversion to 80 meters. Has anyone performed this conversion and
> how did it work?

I have here two of the NC40A's. The first for 40 and the second for 80
meters. The conversion IS simple. No IF manipulations. Only the VFO, a
miniature RF choke and the low pass filter will be changed. A small problem
here was the right VFO frequency. The manual says 90 turns on the original
core, but I needed only 86 turns. The rest of the modification was easy.

--
72/73 de Ingo, DK3RED Don't forget: the fun is the power!

dk3red@t-online.de <http://www.t-online.de/~dk3red>
DL-QRP-AG #824 <http://www.dl-qrp-ag.de>

Date: Sun, 21 Jul 2002 06:22:27 -0600 (MDT)
From: "Karl F. Larsen" <k5di@zianet.com>
To: qrp-l@lehigh.edu
Subject: [130291] FT-817 and amp work
Message-ID: <Pine.LNX.4.44.0207210621410.2173-100000@Daisy.dog>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

I wanted an amplifier that would be driven by my Yaseu FT-817 QRP radio that would make about 50 watts SSB. I also wanted it to work with CW maybe at lower power. I was happy to find a kit for such an amp that was \$100.00.

Virgil, K500R has designed and packaged an amplifier kit that is working very well here now. Like with all new equipment there were some problems. I had more than my share, because I didn't FIND a drill press. I know several people with fine drill presses and should have used one to make the holes in the heat sink. This problem combined with some RF feedback kept my amp from working.

I sent my amp back to Virgil and he put a new heat sink and the new box on my amp. The new box is much better than the Radio Shack box. He also put several toroids on the power wires and re-routed the input and output coax lines.

When I got on the air with this amp I got bad reports of missing parts of words and things like that. I went to saying Ahhhhhh to keep the amp on and they said it sounded better, But this was no good.

It seemed possible to key the amp with a ground sent to the amp when the 817 was keyed. There is what I did to key the amp from the 817.

I bought 10 each 8 pin Mini-Din plugs from Mouser and they are good connectors at least for the job of creating a wired keying line from the Yaseu FT-817 to the Amp. The plugs cost \$1.00 each. I ran just one #26 hook up wire from the TX GND pin on the 8 pin ACC plug (Page 5 of the owners manual) to the pin closest to the center of the Power Supply board of the TEST 2 pin connector. Ground return is provided by the coax line as well as the power supply wiring.

I hooked it all up, running the new wire through the grommet that

the power line uses. Then plugged in all the coax and power leads and got on 40 meters. I discovered that the new wire over-rides the switch with OP and TUNE STDY written for it. I can transmit with the switch in either position. I suspect that I need to put that switch in series with the key lead somehow. Will study the problem, which is not serious.

The amp now sounds good to all the people I have talked to on SSB and also CW. Budd W3FF told me this was the first of the amps that sounded smooth to him.

This means the next kits will be better than the first and will include all the fixes needed to make the kit work the first time you try it out.

--

Yours Truly,

- Karl F. Larsen, (505) 524-3303 -

Date: Mon, 22 Jul 2002 07:20:06 -0500
From: Nick Kennedy <nkennedy@tcainternet.com>
To: "'brad.mugleston@attbi.com'" <brad.mugleston@attbi.com>,
Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>
Subject: [130292] RE: Antenna Learning
Message-ID: <01C23150.351AF8E0.nkennedy@tcainternet.com>
MIME-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Content-Transfer-Encoding: 7bit

You don't really need a balun, IMHO. My first antenna that really worked (around 1963) was made of twin lead. Since I didn't know any better, I hooked right into a PL-259 and started making lots of QSOs.

Baluns can do two things for you: suppress common mode currents and match impedances. Unless you know what the impedance looking into the twin lead is going to be, you can forget that second part. So 4:1 or N:1 doesn't really matter.

As far as common mode currents goes, you could have those whether you're using twin lead or coax. So the need for a balun to suppress them isn't a function of your decision to use twin lead. But if you feel the need to do this, I'd go with a choke type balun. There are a few ways of doing it, all involving a transition to coax. If you're running QRP, you could use RG-174 or similar, since the length of the coax will be small.

The choke balun itself? 1) String a bunch of ferrite beads on the coax. A bunch is about a dozen if you're using RG-58 and those big beads that are about 1.25 inches long. It's more if you're using the little bitty coax and beads. 2) Wind the coax a bunch of times through a ferrite toroid.

This is only practical with the small coax and a big toroid. I'd say 10 - 15 turns. Don't use a yellow or red toroid--they're powdered iron with permeability too low. Use a black (ferrite) one. 3) Wind a coil of coax, 6" diameter and ten turns, between the twin lead and the rig.

72--Nick, WA5BDU

-----Original Message-----

From: brad.mugleston@attbi.com [SMTP:brad.mugleston@attbi.com]

Sent: Sunday, July 21, 2002 12:43 AM

To: Low Power Amateur Radio Discussion

Subject: Antenna Learning

Went to the Swapfest in Loveland today, Picked up some 300 ohm twin lead window stuff. Now I want to build an antenna using some of this wire.

I enjoy 40, 30 & 20 meters (gee, that matches the radios I have).

Now for the question - all the tuners I have take coax. I know I need a balun but I've never made one before. I've got a Yellow toroid I purchased once before to do this same thing but don't know where to start.

I've got an old antenna book and an old manual. I think I'm looking for a 6:1 transformer but most I see are 1:1 and 4:1.

I'm lost.

Thanks,

Brad

Date: Mon, 22 Jul 2002 09:12:08 -0500

From: Nick Kennedy <nkennedy@tcainternet.com>

To: "'k5di@zianet.com'" <k5di@zianet.com>,

Low Power Amateur Radio Discussion <qrp-1@lehigh.edu>

Subject: [130293] RE: Clear the air: Conjugate Primer

Message-ID: <01C2315F.DB77A260.nkennedy@tcainternet.com>

MIME-Version: 1.0

Content-Type: text/plain; charset="us-ascii"

Content-Transfer-Encoding: 7bit

Several folks have indicated their frustration with thread, thinking that things like conjugate matching are in the exclusive realm of geeky EEs and PhDs. That's not so. It's a simple concept that the average ham can readily grab hold of.

Conjugate matching is simply a combining of the maximum power transfer condition and the resonant condition--imposing both constraints on a circuit.

Most hams are familiar with the Maximum Power Transfer Theorem, if not by name then at least by description. It's the one that says if you have a source with internal resistance R_s , you will get maximum power transferred to an external load R_L when R_L equals R_s . You can demonstrate it pretty easily with some fairly simple arithmetic applied to examples, if differential equations aren't your thing. Much of the confusion comes not from the theorem itself, but from the notion that all properly designed circuit interfaces employ it. But we won't go into that at this point. Let's just talk conjugate matching for now.

OK, that's that part or it, match the R_L to the R_s . The second part is just as simple. Consider a series circuit with a constant RF source voltage, a fixed resistance and some reactance in it. How could you modify it to give maximum current flow? You could do that by adding a reactive element of the same magnitude and opposite sign as the one in the circuit. For example, if your initial circuit had $-j200$ ohms capacitive, you would add a $+j200$ ohm inductor in series. This achieves the resonant condition that EveryHam knows about.

Now, combine the two and you have the Conjugate Matched condition. You have a source with internal impedance of 100 ohms plus $j75$ ohms reactive. What load would you connect to it for maximum power transfer.

Intuitively, without having heard the term "conjugate match", you're going to tell me, "I'll cancel out that 75 ohms of inductive reactance with 75 ohms capacitive, and then I'll match the resultant pure 100 ohms with a 100 ohm load." And you'll be correct and this is the conjugate match. No PhD required.

But what if my transmitter had 50 ohms resistive internal impedance, and the Z looking into the terminals is 200 ohms $-j100$ ohms? Same deal. Assuming we want a conjugate match, add in $+100j$ ohms at the match point for resonance. To match the resistance, you could add 150 ohms to the transmitter side, but that wouldn't be too smart. Fortunately there are a number of techniques to transform the 200 ohms down to 50 or the 50 up to 200. And then you have the conjugate match. It's kind of like balancing an equation in chemistry or algebra. You want the values on both sides to be equal, except in this case the reactive parts should be equal and opposite.

If that's all there is too it, why is everybody making it seem so complicated? Good question. First the terms, like Complex Conjugate seem designed to scare you off. "Complex" in this case doesn't mean complicated, it just means that we are looking at impedance numbers that consist of resistive and reactive components. We often put i's or j's in front of the reactive parts like 25j or -30j, but we might just say, "25 ohms inductive" or "30 ohms capacitive". Means the same thing.

And "conjugate" doesn't have anything to do with prison visitation. It's an extremely simple mathematical procedure in which you reverse the sign of the reactive part of the impedance. So "50 +j100" becomes "50 -j100" and "25 -j1.414" becomes "25 +j1.414" when you take their conjugates.

And what's the value of this term, "conjugate"? It allows me to make a simple statement about matching for maximum power transfer, like this: If you have a source with internal impedance Z (example, 75 +j25), connect a load with impedance equal to the complex conjugate of Z to it (example, 75 -j25). So you see, we just "confused up" a concept that you, as a technical astute ham, already knew. BTW, taking the conjugate of a complex number is indicated with an asterisk. So the conjugate of Z is Z*. Just change the sign of the reactive part and you've got it.

If I don't get cussed too bad for this post, I'm gonna say some more about the topic in a bit.

72--Nick, WA5BDU

Date: Sun, 21 Jul 2002 07:31:10 -0700
From: Bob W7AVK <rsrolfne@atnet.net>
To: Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>
Subject: [130294] OT Help?
Message-ID: <3D3AC5AE.DC581908@atnet.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Good Morning - Some time back I seem to remember in a thread about alternate power sources some one answering several questions about gas or diesel generators. He seemed to have a lot of experience in the field and his comments were appreciated.

It turns out I've just gotten a couple salvage 12 KW 220 volt 3 phase

Kubota diesel gen sets and I have several questions. Would that person please contact me off line at <mailto:w7avk@arrl.net>

Thanks for the bandwidth

73 Bob W7AVK

Date: Sun, 21 Jul 2002 08:39:40 -0600
From: "James R. Duffey" <jamesd1@flash.net>
To: <qrp-1@lehigh.edu>, <robert.parks11@gte.net>
Subject: [130295] Re: Balun for K-1
Message-ID: <B96023CC.1972A%jamesd1@flash.net>
Mime-version: 1.0
Content-type: text/plain; charset="US-ASCII"
Content-transfer-encoding: 7bit

Tony - I would say that all of those SWR readings are adequate. SWR is not a good indicator of antenna for a number of reasons, many of which have been discussed here before. I believe with that with those SWR the K-1 will still output its full power.

The coiled coax balun has a 1:1 transformation. Your Radio works balun has a 4:1 ratio, so they present different loads to the K-1 tuner. The tuner is simple with only a few steps, so I am not surprised that it tunes differently and gives different values of SWR.

If you make another coil of coax identical to the first you can make a 4:1 balun. Connect the inputs in parallel, that is center conductor to center conductor and shield to shield. On the other end, connect the feedline to the two center conductors and tie the shields together, but do not make an antenna connection.

This is probably more trouble than it is worth, but you will probably get results that are closer to the 4:1 balun. - Dr. Megacycle KK6MC/5

--

James R. Duffey KK6MC/5
Cedar Crest, NM DM65

Date: Sun, 21 Jul 2002 09:01:02 -0600 (MDT)
From: "Karl F. Larsen" <k5di@zianet.com>
To: Nick Kennedy <nkennedy@tcainternet.com>
Cc: Low Power Amateur Radio Discussion <qrp-1@lehigh.edu>

Subject: [130296] RE: Clear the air: Conjugate Primer
Message-ID: <Pine.LNX.4.44.0207210847410.2535-1000000@Daisy.dog>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

On Mon, 22 Jul 2002, Nick Kennedy wrote:

> Several folks have indicated their frustration with thread, thinking that
> things like conjugate matching are in the exclusive realm of geeky EEs and
> PhDs. That's not so. It's a simple concept that the average ham can
> readily grab hold of.
>
> Conjugate matching is simply a combining of the maximum power transfer
> condition and the resonant condition--imposing both constraints on a
> circuit.

Hi Nick, I'm not afraid of college math or conjugate matching. I have spent 3 days reading all the papers I have directed people to and now I have found a much easier way and more correct way to say exactly the same thing.

Let's take the case where at some polarity and phase a packet of reflected power comes to the tuner. Coming out of that port is the prime forward power and here comes the other way some more power! Well conservation of energy says it must be burned up in $I^2 R$ loss, or re-reflected. With no R in sight it is reflected again. Now a big point, again due to conservation of energy, the power traveling to the load must be exactly the sum of the prime power and the reflected power, so in some manner the two powers come in phase with each other. I'm not interested in that now.

I plan to write and draw pictures that explain this method for designing an all band antenna and put it on my web page. That's the only way I have to show you a picture with words.

--

Yours Truly,

- Karl F. Larsen, (505) 524-3303 -

Date: Sun, 21 Jul 2002 17:51:29 +0400
From: "Oleg V. Borodin" <master72@lipetsk.ru>
To: <QRPP-I@yahoogroups.com>, "QRP-L" <qrp-l@lehigh.edu>
Subject: [130297] Micro-80 kits

Message-ID: <007b01c230c7\$255d6ca0\$abe522c3@user.lipetsk.ru>
MIME-Version: 1.0
Content-Type: text/plain;
charset="koi8-r"
Content-Transfer-Encoding: 7bit

Dear friends!

I receive some messages about a problems with money transfer for me. I did not know befor about so high Bank charges for transfer. The who want to pay for kits, please make a transfer via PayPal for my friend (and Treasure, hi) George Gingell, K3TKS to "George Gingell, K3TKS" at <<https://paypal.com/>> <k3tks@abs.net> and inform me also by e-mail.

I have about 80 orders for the time, all kits will be send for customers, don't worry. But it would be isn't so quick because I cann't paying the post tax at once, sorry. I think it would be during a month. After I send each parcel I inform the customer about a date I send. Wait, please.
Thanks for all who interesting for Micro-80!

BTW, anybody else who wish get a FREE Micro-80 trcvr kit - you have a time yet to make your orders!
You did not risk any way!
The best wishes for ALL!

72! de RV3GM/QRP Oleg V. Borodin
QRP-ARCI, G-QRP, QRPP-I, QRP-Master, Hawaii-QRP, AGCW-DL etc...
www.qsl.net/rv3gm/

Date: Sun, 21 Jul 2002 17:21:28 +0400
From: "Oleg V. Borodin" <master72@lipetsk.ru>
To: "QRP-L" <qrp-l@lehigh.edu>, <QRPP-I@yahoogroups.com>
Subject: [130298] Re: [QRPP-I] To: Oleg V. Borodin, RV3GM/QRP
Message-ID: <007801c230c7\$20e997c0\$abe522c3@user.lipetsk.ru>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Greetings from RV3GM/QRP!

Does anybody else have a problems with e-mail for me? If it's send again
your messages for my fundamental address: master72@lipetsk.ru I think
rv3gm@qsl.net some time work is not correctly, sorry.

>Oleg... please send me an email address I can reach you at. All my emails
>to you bounce (not deliverable).

>

>73/72/71! de Brice KA8MAV

>

72! de RV3GM/QRP Oleg V. Borodin
QRP-ARCI, G-QRP, QRPP-I, QRP-Master, Hawaii-QRP, AGCW-DL etc...
www.qsl.net/rv3gm/

Date: Sun, 21 Jul 2002 10:16:01 -0500
From: <mgoins@usa.net>
To: <qrp-l@lehigh.edu>
Subject: [130299] WTB-SW-30+ NEW
Message-ID: <20020721151601.12124.qmail@uadvg137.cms.usa.net>
Mime-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: quoted-printable

A small problem has arisen with the rig I had hoped to buy, so I'm still=
looking. =

If anyone has a SW-30+ they'd part with reasonably, please email me off l=
ist.
I'm wanting it to try some more bicycle mobile on 30. Thanks. =

mike
wb5yjx

Date: Sun, 21 Jul 2002 11:45:42 -0400

From: Rick McKee <kc8aon@juno.com>
To: qrp-1@lehigh.edu
Subject: [130300] Conjugate Primer - Spam law violations !
Message-ID: <20020721.114653.9006.0.kc8aon@juno.com>

NEXT THING YOU KNOW WE'LL BE TALKIN ABOUT CONJUGAL VISITS TO THE PRISON
- ANYBODY GOT ANYTHING NEW ????? DUH !

Rick McKee, KC8AON
Willow Wood, Ohio
QRP - Do more with less !

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Date: Sun, 21 Jul 2002 11:58:02 -0400
From: W2AGN <w2agn@w2agn.net>
To: Low Power Amateur Radio Discussion <qrp-1@lehigh.edu>
Subject: [130301] RE: Clear the air: Conjugate Primer
Message-ID: <3D3AA1CA.2468.E6ABEA0@localhost>
MIME-version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7BIT
Content-description: Mail message body

On 21 Jul 2002 at 9:01, Karl F. Larsen wrote:

> Let's take the case where at some polarity and phase a packet of
> reflected power comes to the tuner. Coming out of that port is the prime
> forward power and here comes the other way some more power! Well
> conservation of energy says it must be burned up in $I^2 R$ loss, or
> re-reflected. With no R in sight it is reflected again. Now a big point,
> again due to conservation of energy, the power traveling to the load
> must be exactly the sum of the prime power and the reflected power, so
> in some manner the two powers come in phase with each other. I'm not
> interested in that now.

Is it just me, or has this become mindless drivel? I want to know in which manner these two powers come into phase? Can they do it in an ordinary house, (or even apartment) or must it be a manor? Oh well, if he's not interested in that now, why should anyone else be?

--

/ \ / \ / \ / \ / \ John L. Sielke
(W)(2)(A)(G)(N) <http://www.w2agn.net>
/ _/_ _/_ _/_ _/_ ARCI, NJQRP, ARQrp, GQRP, RSGB
Ex- K3HLU, W7JEF, W4MPC, N4JS

Date: Sun, 21 Jul 2002 12:01:57 -0400
From: Rick McKee <kc8aon@juno.com>
To: qrp-1@lehigh.edu
Subject: [130302] Good source for QRP Antenna wire.
Message-ID: <20020721.120213.9006.1.kc8aon@juno.com>

HEY GANG,

Was at the mall the other day, and decided to stroll through one of those dollar stores and netted a pretty good haul ! Speaker wire that is, 20 gauge, 2 conductor zip cord, vinyl coated in 50 foot rolls. I bought 5 rolls just to have on hand. The cheapest I've seen these before was about \$3.99 at Big Lots. !00 feet of wire for a buck, now that's a cheap antenna ! Might pay to check them out in your area !

Rick McKee, KC8AON
Willow Wood, Ohio
QRP - Do more with less !

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Date: Sun, 21 Jul 2002 09:37:41 -0700
From: "Bob Tellefsen" <n6wg@earthlink.net>
To: <qrp-1@lehigh.edu>
Subject: [130303] Re: Antenna Learning
Message-ID: <MABBJOEABOILMKCJCLFCOEADHAA.n6wg@earthlink.net>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Brad

The simplest approach is to cut your feedline length to present a low, fairly non-reactive impedance at the shack end on the highest band you want to operate. Then make up short sections of additional 300-ohm line with banana connectors at the ends. Each extension section can be used to bring the total feed line length to a low, fairly nonreactive Z at the shack end for that particular band.

So you would have your basic feedline trimmed for 20m, with extensions for 30m and 40m.

Then homebrew a 1:1 balun using a toroid or rod core to go between the end of the feedline and your tuner. The 1:1 baluns work best at low impedances with fairly low reactance. This will also give you the best bandwidth for a given band once matched.

73, Bob N6WG

Date: Sun, 21 Jul 2002 10:50:07 -0600
From: William R Colbert <w5xe@juno.com>
To: qrp-l@lehigh.edu
Subject: [130304] RE: Clear the air: Conjugate Primer
Message-ID: <20020721.105010.-343843.0.w5xe@juno.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

bingo

Date: Sun, 21 Jul 2002 13:28:37 -0400
From: Rick McKee <kc8aon@juno.com>
To: qrp-l@lehigh.edu
Subject: [130305] 1:1 Balun at input of tuner - IT WORKS !
Message-ID: <20020721.132840.9006.3.kc8aon@juno.com>

Gang,

If ya'll wanna use balanced line with a tuner, just put the danged balun at the input of the tuner ! And make sure you use a 1:1 balun at that. Yes, I said "USE A 1:1 BALUN". If you put a 1:1 balun at the input of the tuner and tune for a good match, the balun will always see a load somewhere close to it's design impedance. For the 1:1 balun, you can use ferrite beads slipped over your coax jumper that connects the rig

to the tuner, you can use just the coax wound into a choke balun, you can use a 1:1 balun wound on a toroidal core, or you can make one by running the coax through a 2 inch section of pvc pipe, then packing the pipe with plain ole steel wool while keeping the coax centered in the pipe. To make a balun this way that will cover 10 - 80 meters, make it 9 inches long, if you plan on working 10 thru 160 meters, make it 18 inches long. Anyway you choose though, put it at the "INPUT" of the tuner ! Then connect the balance line from the antenna direct to the output of the tuner. Connect one side of the balanced line to the center conductor of one of the coax fittings if you have to, use a banana plug - they fit the center connector of an S0-239 real well, and simply connect the other side of the balanced line to the ground lug on the tuner. I have used this setup with great success with a 135 foot long dipole fed with 450 ohm window line in the past, and it tuned 10 thru 80 meters with a near 1:1 swr almost anywhere I operated. I presently use a 178 foot long center fed zepp fed with the 450 ohm stuff going to an external balun outside the shack just because I didn't want to bring the balanced line into the shack. But I'm planning on building a separate building for use as a shack in the near future, and when I do, I will return to using the balun at the input of my tuner. If you don't mind balanced line coming into your shack, give this a try, it'll keep your rig and the tuner happy plus allow some very LOW LOSS multi band operation !

PS: NOW QUIT FUSSIN ABOUT CONJUGATE MATCHES AND SPAM LAW VIOLATIONS, AND GET ON THE AIR AND OPERATE !

>>>>> SNICKER SNICKER <<<<<

Rick McKee, KC8AON

Willow Wood, Ohio

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<http://dl.www.juno.com/get/web/>.

Date: Sun, 21 Jul 2002 11:50:43 -0600

From: "James R. Duffey" <jamesd1@flash.net>

To: <qrp-l@lehigh.edu>, <nkennedy@tcainternet.com>

Subject: [130306] RE: Clear the air: Conjugate Primer

Message-ID: <B9605093.1974A%jamesd1@flash.net>

Mime-version: 1.0

Content-type: text/plain; charset="US-ASCII"

Content-transfer-encoding: 7bit

Nick and the list - I have avoided getting deeply involved in this thread as it seems to have quickly evolved into a electro-political discussion. But I can't take it any more.

I think that it is important to understand conjugate matching as it gives us insight into how our antenna tuners, feedlines, transmitter matching networks, and receiving front end filters work. I think that it makes no more sense to say "I don't care about conjugate matching; I twist my tuner knobs and get a 1:1 SWR without understanding complex variables" , than it does to say "I don't care about Ohm's Law, I turn the volume control and get the audio level I want without understanding voltage, current and resistance".

Understanding how our radios and antennas work is becoming a diminishing part of the hobby. It lives more in the QRP world than in other parts of the ham kingdom. I am not saying that everybody needs to understand everything about their radios and antennas. But I think everybody should try to understand more than they presently know about their radios and how they work. When you stop learning, a part of you dies. If nobody wanted to understand how radios work, the day will come when we will not have any new radios to operate.

Complex math is scary because it is not taught widely. I suspect that those questions about impedance and the Smith Chart are responsible for more Extra exam failures than anything except the code.

When we don't know something we tend to take shortcuts, and in the long run, these short cuts can make understanding the real problem even more difficult. When we talk about the maximum power transfer theorem we usually speak only in terms of resistance, but the theorem is clearly stated to include the complex portion of impedance as well:

Maximum Power Transfer Theorem

"The maximum power will be absorbed by one network (say the antenna) from another (the feedline or transmitter) joined to it at two terminals when the impedance of the receiving network (the antenna) is varied, if the impedances of the two networks at the junction are conjugates of each other."

This is in most elementary texts on AC Circuits or Network Theory and is usually accompanied by a proof. The above quote came from Maxwell, who quoted it from Everitt "Communication Engineering".

The Conugate Matching Theorem

"If a group of four terminal networks containing only pure reactances (this implies lossless lines) are arranged in tandem to connect a generator

(transmitter) to a load (antenna), then if at any junction there is a conjugate match of impedances there will be a conjugate match at every other junction in the system".

This is also from Maxwell. Now in a simplified ham radio antenna system the tandem four terminal networks are the tuner and feedline. The transmitter is tied to the input terminal of the first four terminal network, the tuner. The tuner output is tied to the feedline, which is the second tandem four terminal network. Its output is tied to the antenna.

Suppose my transmitter output has a source impedance of $(50 + j10)$ Ohms. Now I adjust the tuner to achieve maximum power transfer. The input impedance of the tuner will be $(50 - j10)$ Ohms. I have a conjugate match. If I move to the output of the tuner I will find that it has an impedance of $R' + jX'$, and the input to the feedline which is tied to this has an impedance of $R' - jX'$, again a conjugate match. Moving to the output of the feedline, we see an output impedance of $R'' + jX''$ and looking at the input terminals of the antenna we will see $R'' - jX''$. Again a conjugate match. And each point we look at in between the tuner and antenna has no net reactance, so it is at resonance.

This has some interesting implications. I can move the tuner to the antenna terminals, adjust it for maximum power transfer. and also get maximum power transfer from the transmitter to the feedline, even if the feed line is not of the same characteristic impedance as the transmitter.

For that matter, I can move the tuner anywhere along the feedline, change the characteristic impedance of the feedline, and use different impedance transmission line before and after the tuner, and still maintain maximum power transfer from the transmitter and to the antenna.

To understand this further, you can get a computer program that allows you to look at the impedance anywhere on a transmission line. TLW is one such program. I think it is available at the ARRL web site. There is also one called ZISL(?or somethign like that). One or the other of these had been included with Antenna Books in the past.

I think much of the confusion arises because we do not fully understand or appreciate that the transmission line acts like a transformer, capable of changing the loads at one end of the line into something entirely else at the other end. Depending on the length of the transmission line, it can change a chort circuit into an open circuit, a reactive load into a resistive load, a capacitive load into an inductive load, and also leave the load unchanged.

I hope that this contributes positively to the discussion. If you use a tuner, particularly with balanced feeders, and want to know how it works, get a copy of Maxwell, "Reflections II". - Dr, Megacycle KK6MC/5

James R. Duffey KK6MC/5
Cedar Crest, NM DM65

Date: Sun, 21 Jul 2002 12:58:50 -0500
From: John Seboldt <k0jd-1@seboldt.net>
To: qrp-1@lehigh.edu
Subject: [130307] Re: 1:1 Balun at input of tuner - IT WORKS !
Message-ID: <5.1.0.14.0.20020721125606.009f8010@seboldt.net>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"; format=flowed

At 01:28 PM 7/21/02 -0400, you wrote:

>Gang,
> If ya'll wanna use balanced line with a tuner, just put the danged
>balun at the input of the tuner ! And make sure you use a 1:1 balun at
>that. Yes, I said "USE A 1:1 BALUN". If you put a 1:1 balun at the
>input of the tuner and tune for a good match, the balun will always see a
>load somewhere close to it's design impedance.

Absolute agreement here. There are several older tuner circuits that enshrine this idea, in older handbooks, and maybe even in the current ones, haven't looked. There is some debate as to whether this is a true balanced situation, but it's surely better than the 4:1 balun on the output into a random load.

>For the 1:1 balun, you
>can use ferrite beads slipped over your coax jumper that connects the rig
>to the tuner, you can use just the coax wound into a choke balun, you can
>use a 1:1 balun wound on a toroidal core, or you can make one by running
>the coax through a 2 inch section of pvc pipe, then packing the pipe with
>plain ole steel wool while keeping the coax centered in the pipe.

The steel wool balun idea has long been proven ineffective. A QST article did some measurements to this effect. Stick with ferrite.

72,

John K0JD
Milwaukee

Date: Sun, 21 Jul 2002 12:10:42 -0600 (MDT)
From: "Karl F. Larsen" <k5di@zianet.com>
To: W2AGN <w2agn@w2agn.net>
Cc: Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>
Subject: [130308] RE: Clear the air: Conjugate Primer
Message-ID: <Pine.LNX.4.44.0207211209030.2935-100000@Daisy.dog>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

On Sun, 21 Jul 2002, W2AGN wrote:

> On 21 Jul 2002 at 9:01, Karl F. Larsen wrote:
>
> > Let's take the case where at some polarity and phase a packet of
> > reflected power comes to the tuner. Coming out of that port is the prime
>
> Is it just me, or has this become mindless drivel? I want to know in which manor
these two powers come into phase? Can they do it in an ordinary house, (or even
> apartment) or must it be a manor? Oh well, if he's not interested in that now,
why should anyone else be?

Unless you have something to add, other than a character
assaination, please don't send it to this list. This seems to be all you
do any more.

--
Yours Truly,

- Karl F. Larsen, (505) 524-3303 -

Date: Sun, 21 Jul 2002 14:38:03 -0400
From: W2AGN <w2agn@w2agn.net>
To: "Karl F. Larsen" <k5di@zianet.com>,
Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>
Subject: [130309] RE: Clear the air: Conjugate Primer
Message-ID: <3D3AC74B.20001.EFD4A40@localhost>
MIME-version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7BIT
Content-description: Mail message body

On 21 Jul 2002 at 12:10, Karl F. Larsen wrote:

>
> Unless you have something to add, other than a character

> assaination, please don't send it to this list. This seems to be all you
> do any more.
>
> --
> Yours Truly,
>
> - Karl F. Larsen, (505) 524-3303 -
>

No intent to "assainate" anyone's character. There are a lot of people of
excellent character, who are still, unfortunately, idiots. No reflection on
character whatever, some
even get elected to high office.

--

/ \ / \ / \ / \ / \ John L. Sielke
(W)(2)(A)(G)(N) <http://www.w2agn.net>
/ _/_ _/_ _/_ _/_ ARCI, NJQRP, ARQrp,GQRP,RSGB
Ex- K3HLU, W7JEF, W4MPC, N4JS

Date: Sun, 21 Jul 2002 13:52:18 -0500
From: Tim Pettibone <k5oi@cox.net>
To: qrp-l@lehigh.edu
Subject: [130310] RE: 24 hr, UTC, WWVB Clock at Wal-Mart for \$12.56
Message-ID: <5.1.0.14.0.20020721134711.009eb630@pop.central.cox.net>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"; format=flowed

Darn! Checked the local Wal-Mart and found two WWV clocks - one analog for
\$11.XX and a digital for \$24.XX. Both are made by Atomix and both claimed
"automatic" adjustment for daylight savings time and back. Couldn't get to
the instructions (you know with store security looking over your shoulder
and all!) so couldn't tell if the DST feature was switchable or not. I'll
wait a bit more. I liked Karl K's idea of having two such clocks, one set
for GMT and one for local. Wal-mart, by the way, had very nice smallish (5
or 6") analog wall clocks for \$3.84 on sale - almost bought one.

Tim K5OI
Stillwater, OK

Date: Sun, 21 Jul 2002 15:13:20 -0400
From: Bill Coleman <aa4lr@arrl.net>
To: <kc8aon@juno.com>,
"Low Power Amateur Radio Discussion" <qrp-1@lehigh.edu>
Subject: [130311] Re: 1:1 Balun at input of tuner - IT WORKS !
Message-ID: <20020721191452.PUWF1189.imf09bis.bellsouth.net@[192.168.0.20]>
Mime-Version: 1.0
Content-Type: text/plain; charset="US-ASCII"

On 7/21/02 1:28 PM, Rick McKee at kc8aon@juno.com wrote:

>If ya'll wanna use balanced line with a tuner, just put the danged
>balun at the input of the tuner ! And make sure you use a 1:1 balun at
>that. Yes, I said "USE A 1:1 BALUN". If you put a 1:1 balun at the
>input of the tuner and tune for a good match, the balun will always see a
>load somewhere close to it's design impedance.

Very true. Of course, you realise you need a balanced tuner. The
unbalanced "T" or "L" tuner won't do if the input is balanced.

Balanced (input) tuners are something of a rarity on the commercial
market. Of course, you can homebrew one easily enough.

I'd submit, Rick, that this is the most efficient way to use a 1:1 balun
with a multi-band antenna.

> For the 1:1 balun, you
>can use ferrite beads slipped over your coax jumper that connects the rig
>to the tuner,

W2DU balun.

> you can use just the coax wound into a choke balun,

6-12 turns on a 4-6 inch form works well -- keep the turns in a single
layer.

>you can
>use a 1:1 balun wound on a toroidal core,

Either a Guanella or a W1JR balun.

>or you can make one by running
>the coax through a 2 inch section of pvc pipe, then packing the pipe with
>plain ole steel wool while keeping the coax centered in the pipe. To
>make a balun this way that will cover 10 - 80 meters, make it 9 inches
>long, if you plan on working 10 thru 160 meters, make it 18 inches long.

ARGH NO! This abomination has been proven NOT to be a balun at all. Moreover, if you have significant common-mode currents, it can be a REAL TVI generator. There's a reason this design was pulled from the ARRL handbooks.

>Anyway you choose though, put it at the "INPUT" of the tuner ! Then
>connect the balance line from the antenna direct to the output of the
>tuner. Connect one side of the balanced line to the center conductor of
>one of the coax fittings if you have to, use a banana plug - they fit the
>center connector of an SO-239 real well, and simply connect the other
>side of the balanced line to the ground lug on the tuner.

Please don't do this. The surface of the tuner will be "hot" with half of the RF current.

No, if you want to use a balanced input, get or build a tuner designed for this service.

Bill Coleman, AA4LR, PP-ASEL Mail: aa4lr@arrl.net

Quote: "Not within a thousand years will man ever fly!"

-- Wilbur Wright, 1901

Date: Sun, 21 Jul 2002 15:25:08 -0400
From: "Steve Baker" <k8pz@earthlink.net>
To: "Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [130312] Re: Clear the air: Conjugate Primer
Message-ID: <001e01c230ec\$543a09a0\$0200a8c0@mshome.net>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

----- Original Message -----

From: "W2AGN" <w2agn@w2agn.net>
To: "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Sent: Sunday, July 21, 2002 14:38
Subject: RE: Clear the air: Conjugate Primer

There are a lot of people of excellent character, who are still, unfortunately, idiots. No reflection on character whatever, some even get elected to high office.

>
>

Brings to mind a quote attributed to B. Franklin -

The learned Fool writes his Nonsense in better
Language than the unlearned; but still 'tis Nonsense.

Date: Sun, 21 Jul 2002 15:37:16 -0400
From: Bill Coleman <aa4lr@arrl.net>
To: <brad.mugleston@attbi.com>,
"Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [130313] Re: Antenna Learning
Message-ID: <20020721193715.ZCSV1203.imf28bis.bellsouth.net@[192.168.0.20]>
Mime-Version: 1.0
Content-Type: text/plain; charset="US-ASCII"

On 7/21/02 1:42 AM, brad.mugleston@attbi.com at brad.mugleston@attbi.com
wrote:

>Now for the question - all the tuners I have take coax. I know I need a
>balun but I've never made one before. I've got a Yellow toroid I
>purchased once before to do this same thing but don't know where to start.

If it is Yellow, that's probably not the right mix. For Voltage baluns at
HF, most I have seen are -2 mix.

Frankly, I wouldn't recommend the voltage balun anyway.

>I've got an old antenna book and an old manual. I think I'm looking for a
>6:1 transformer but most I see are 1:1 and 4:1.

Don't worry about the transformation ratio. If you are using this on
multiple bands, you'll have reactive components traversing the line, so
you won't get a fixed transformation ratio anyway.

I recommend you construct a 1:1 current balun. There are designs in the
most recent handbook.

The simplest is a coil made of coax. Use 6-8 turns on a 4-6 inch form.
Wind in one layer.

Ferrite beads slipped over coax make the W2DU balun. For HF, you'd
typically use type 77 or 73 beads. You can use type 43 beads, but you
need more of them. You need at least 15-18 inches of beads to get good
choking impedance.

If you can get a type 77 or 43 ferrite core, you can wind small-diameter coax around a core. 6-9 turns works well for HF on a FT240 core. RG-174 is OK for QRP, for more power use a teflon-insulated coax, like RG-142, RG-303 or RG-316.

Bill Coleman, AA4LR, PP-ASEL Mail: aa4lr@arrl.net
Quote: "Not within a thousand years will man ever fly!"
 -- Wilbur Wright, 1901

Date: Sun, 21 Jul 2002 15:44:39 -0400
From: Bill Coleman <aa4lr@arrl.net>
To: <k5di@zianet.com>,
 "Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [130314] RE: Clear the air: Conjugate Primer
Message-ID: <20020721194610.WJLA11981.imf03bis.bellsouth.net@[192.168.0.20]>
Mime-Version: 1.0
Content-Type: text/plain; charset="US-ASCII"

On 7/21/02 2:10 PM, Karl F. Larsen at k5di@zianet.com wrote:

>Unless you have something to add, other than a character
>assaination, please don't send it to this list. This seems to be all you
>do any more

Bite your tongue, Karl!

Dr Mc very nicely summarised the entire discussion of conjugate matching.

Bill Coleman, AA4LR, PP-ASEL Mail: aa4lr@arrl.net
Quote: "Not within a thousand years will man ever fly!"
 -- Wilbur Wright, 1901

Date: Sun, 21 Jul 2002 15:45:29 -0400
From: Bill Coleman <aa4lr@arrl.net>
To: "Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [130315] RE: Clear the air: Conjugate Primer
Message-ID: <20020721194700.UJD19924.imf01bis.bellsouth.net@[192.168.0.20]>

Mime-Version: 1.0
Content-Type: text/plain; charset="US-ASCII"

On 7/21/02 2:10 PM, Karl F. Larsen at k5di@zianet.com wrote:

>Unless you have something to add, other than a character
>assaination, please don't send it to this list. This seems to be all you
>do any more

Bite your tongue, Karl!

John very nicely summarised the entire discussion of conjugate matching.

(oops, I got a bit confused over callsigns there for a moment -- it happens)

Bill Coleman, AA4LR, PP-ASEL Mail: aa4lr@arrl.net
Quote: "Not within a thousand years will man ever fly!"
 -- Wilbur Wright, 1901

Date: Sun, 21 Jul 2002 16:17:49 -0400
From: "John Dorson" <jdorson@worldshare.net>
To: <w2agn@w2agn.net>,
 "Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [130316] Re: Clear the air: Conjugate Primer
Message-ID: <002701c230f3\$b5b63a80\$3fede143@atwork>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

You got that right.

----- Original Message -----

From: "W2AGN" <w2agn@w2agn.net>
To: "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Sent: Sunday, July 21, 2002 2:38 PM
Subject: RE: Clear the air: Conjugate Primer

> On 21 Jul 2002 at 12:10, Karl F. Larsen wrote:
>
> >
> > Unless you have something to add, other than a character
> > assaination, please don't send it to this list. This seems to be all you

> > do any more.
> >
> > --
> > Yours Truly,
> >
> > - Karl F. Larsen, (505) 524-3303 -
> >
>
> No intent to "assainate" anyone's character. There are a lot of people of
excellent character, who are still, unfortunately, idiots. No reflection
on character whatever, some
> even get elected to high office.
>
>
> --
>
> / \ / \ / \ / \ / \ John L. Sielke
> (W)(2)(A)(G)(N) <http://www.w2agn.net>
> _ / _ / _ / _ / _ ARCI, NJQRP, ARQrp,GQRP,RSGB
> Ex- K3HLU, W7JEF, W4MPC, N4JS

Date: Sun, 21 Jul 2002 16:48:03 -0400
From: JD Delancy <W1JD@drix.net>
To: k5oi@cox.net
Cc: Low Power Amateur Radio Discussion <qrp-1@lehigh.edu>
Subject: [130317] Re: 24 hr, UTC, WWVB Clock at Wal-Mart for \$12.56
Message-ID: <3D3B1E03.F9055D15@drix.net>
MIME-version: 1.0
Content-type: text/plain; charset=us-ascii
Content-transfer-encoding: 7BIT

Yea, I ran into the same thing, no 12 buck Oregon Scientific one but the 24 buck
one
from Atomix (tried three stores). Took it.

The Atomix syncs with WWVB on 60Khz, 12 or 24 hour format, 2 "AA" batteries
(expected life expectancy of one year) required, time zones of PST, MST, CST and
EST
selectable, DST on/off, calendar (mo/day/yr), temperature reading in "C" or "F"
and
time in hour/min/second 2.5 inch display.

jd
Southern Maryland

Tim Pettibone wrote:

>
> Darn! Checked the local Wal-Mart and found two WWV clocks - one analog for
> \$11.XX and a digital for \$24.XX. Both are made by Atomix and both claimed
> "automatic" adjustment for daylight savings time and back. Couldn't get to
> the instructions (you know with store security looking over your shoulder
> and all!) so couldn't tell if the DST feature was switchable or not. I'll
> wait a bit more. I liked Karl K's idea of having two such clocks, one set
> for GMT and one for local. Wal-mart, by the way, had very nice smallish (5
> or 6") analog wall clocks for \$3.84 on sale - almost bought one.
>
> Tim K50I
> Stillwater, OK

Date: Sun, 21 Jul 2002 17:51:39 EDT
From: NB6M@aol.com
To: qrp-l@Lehigh.EDU
Subject: [130318] AOL 7.0 Compatible with posting to the list?
Message-ID: <19a.59ea91a.2a6c86eb@aol.com>
MIME-Version: 1.0
Content-Type: text/plain; charset="US-ASCII"
Content-Transfer-Encoding: 7bit

Hi All,

I am still using AOL 5.0 in my computer because when people upgraded to AOL 6.0, that version couldn't post an email to the list without some fancy footwork.

Is AOL 7.0's email format compatible with posting to the list?

Please reply direct, so as to keep the bandwidth down.'

Thanks,

Wayne NB6M

Date: Sun, 21 Jul 2002 14:57:05 -0700
From: "Trevor Jacobs" <kg6cyn@earthlink.net>
To: "Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [130319] Camping report from Pyramid Lake...(long)
Message-ID: <00ef01c23101\$8e234680\$c098b3d1@tjacobs>
MIME-Version: 1.0
Content-Type: text/plain;

charset="iso-8859-1"

Content-Transfer-Encoding: 7bit

Hi Gang,

Well, wasn't exactly the best weekend as portable operations go, Hi. We arrived at the camp site around 10 PM, so setting up the station on the first night was out of the question, as we had the tent to put up and people to chat with that we hadn't seen in a while. I got up Saturday morning, and as everyone was heading to the lake, I figured that I'd get a few hours of radio time in. By the time I'd had breakfast, cleaned up, got the station set up (FT-817 and MP-1) and was ready to operate, it was close to 10 AM. I listened around on 10 thinking that there may be an opening, but nothing was heard. 15 was the same. This brings us to around 12:00. I decided to move down to 20 meters and see if I could hear any activity there. Didn't hear anything around 14.060, so I called CQ a few times with no takers. Then I moved up to the SSB portion of the band and heard a few strong stations chatting, so it appeared that the band was open. A few minutes later I heard Scott N00BA calling CQ from Aurora, CO. He was having a hard time receiving me, so we cut it short. At least I knew the rig was working though. I decided to call CQ a few times and Bob W2NGK/5 from Albuquerque, NM came back and mentioned that he had monitored my last QSO with Scott and that I was a solid 56 out his way and 100% readable, so I started to feel a little better, Hi. Right about that time, I decided to go back down to 14.060 and try to round up at least 1 CW QSO while the band was open. I heard quite a bit of activity and decided to listen for a signing station to pounce on, Hi! This approach seems to work the best for me, or answering a CQ. As I was listening to a very strong station, it sounded as though someone had just pulled the antenna down. All of a sudden, the band went completely dead, no CW, no Digital, no SSB, nothing. I checked WWV at 10 MHz, and there was nothing. I checked all of the bands and heard nothing. I knew that 1 of 2 things had just happened, and both would mean potentially no more radio for the day. Either A) the RX in my FT-817 had just bit it, or we had some kind of major solar event. Well, I gave my friend Dave WD4PLI a call on the phone, and had him fire up his rig. To both of our surprise, the bands were indeed completely dead, deader than I've ever heard them. Well, at this point, since the truck was in the shade, and all the kids were at the lake (quiet!) I decided to take a little nap and try again later. About an hour or so later the group from the lake showed up so we hung out for a bit and ate some lunch. During lunch, the wind really picked up, and before I could get to the MP-1 antenna that was set up on the top of my blazer, the wind blew it off the truck and snapped the top section of the whip off! Well I wasn't too happy about that, but I took some Gaf tape and taped the section back on and also did a better job of securing the tripod. Sure could have used a couple of small sand bags to secure the tripod, but I made do with what was available. Vern, I'll be calling you for a replacement whip soon. After

we finished eating I re-tuned the antenna and listened around a bit to see if 20 meters had come back to life. Well, heard no CW at all still, but I did hear 1 station in GA, as the GA QSO Party was going on this weekend. Anyway, I gave W4CEB a shout and he came back with a 57 report. And that was all she wrote. After that QSO I ended up spending some time with our friends and drinking a few chilled 807's.

As far as the camp site area goes, it's not too bad at all if you are in the Los Angeles area and want a location to get out of town for a weekend with a radio in tow. It's located on the 5 freeway up the Grape Vine. It took us a little under an hour from Burbank to get there. There are running water bathroom facilities, and a small store for ice and beverages and such. As far as antennas go, there are a few trees that you could get a dipole up into, but they probably peak only about 25 to 30'. You'd probably do better with a vertical, as there is plenty of space for radials. Also, there is a lack of shade in most camp sites during the day, we got lucky as the people that we were camping with knew this and reserved one that they knew had a few trees. As long as you bring some kind of shelter/awning to provide shade over the picnic table, you'll be fine. Oh, and one word on the picnic tables, don't think about moving them, as they are solid concrete! Also as many of you who camp probably know, there is a total ban on camp fires in CA this year due to all of the fires we've had so far. I'm not sure about the rest of the country, but I bet CO has a similar ban. Make sure that you take a small gas stove to cook on. The weather was typical for camping in this area, hot in the day and chilly at night, so bring some short pants for the day and some sweats for the evening.

That's about it, was still a fun trip, even though the radio end of it didn't go quite as planned. The DSW never saw the light of day! I did realize on this trip, that I need to come up with some better strategy for portable antennas. The MP-1 is a great little antenna for 20 and above (heck, I've worked Japan on 10 meters with it at 2 watts!), but I'd like something for 30,40, and 80 as well that would be more efficient. The wire antennas generally do great also, but a lot of times (especially on the beach) there are no places to hang them. Anyway, food for thought. Hope everyone had a nice weekend, think I'm going to fire up the little 817 at home now for a couple of hours and try to scrape up a few QSO's. My CW is getting rusty, Hi!

73's Trev KG6CYN

<http://home.earthlink.net/~kg6cyn>

<http://www.qsl.net/kg6cyn>

Date: Sun, 21 Jul 2002 15:09:37 -0700
From: Brian Kassel <bkassel@mato.com>
To: QRP-L <QRP-L@lehigh.edu>, Michael Todd <hamike@earthlink.net>,
Floyd Smithberg <nq7x@earthlink.net>
Subject: [130320] Contest: CQC Goldrush - K7RE
Message-ID: <3D3B3121.177E5A73@mato.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Gangue:

Wow, that was painful. Conditions were really rotten here, no other way to put it. Each QSO was a struggle, some more than others. I sure hope conditions weren't as bad for the rest of the country, but I'm afraid that they were. Very weak, and fading signals.

Thanks to the CQ gang for putting on this event.

I worked 14 different stations, had 22 QSO's. Worked VE7NI and K0ZK 3 times. Total QSO points were 56, and 14 multipliers for a total score of 784.

To make matters worse, I tried to do the CQ VHF contest this weekend. I even put up a new 6M antenna. No QSO's, not one!

Sure hope conditions are better for the next one. Think I'll crack a Heineken ;)

Brian K7RE
Spearfish SD
In the Black Hills

Date: Sun, 21 Jul 2002 16:33:47 -0600 (MDT)
From: "Karl F. Larsen" <k5di@zianet.com>
To: qrp-l@lehigh.edu
Subject: [130321] Tuner basics
Message-ID: <Pine.LNX.4.44.0207211521060.2935-100000@Daisy.dog>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

After discussing the tuner herein exactly an MFJ model MFJ-941C but valid for all similar tuners, they are bi-directional. This means exactly that if I tune the load so that the transmitter has a steady state SWR=1:1 then any power entering the tuner from the load will likewise be tuned to appear as power with the proper impedance to have a

perfect SWR and the power will be absorbed by the transmitter output impedance. Period. End of discussion.

My tuner discussions were with 2 professors of Electrical Engineering and we all three agreed the tuner has to work this way. There can not be any "special" matching that changes the bi-directional characteristics of this tuner. They said there might exist some special tuner that isn't bi-directional but we didn't know of any.

The antenna I'm using works fine on 80 meters even though it's physical length is only 88 feet, about. I don't know the feed point impedance but it's close to 450 ohms, like 300 or 600 ohms, like that with some reactance as well. I think the reason it works well is because there is not a lot of power reflected back to the transmitter.

I'm listening to the 15 meter DX Beacons and 15 is dead to everything but South America.

I have a MFJ Antenna Analyser and can measure the feedline impedance at the tuner. If I measure the length of my 450 ohm ribbon and learn it's velocity factor I can use the nice Smith Chart to find out what the antenna impedance is. The Smith Chart I print at home on my old HP Laserjet 2 and could easily make one for each band.

--

Yours Truly,

- Karl F. Larsen, (505) 524-3303 -

Date: Sun, 21 Jul 2002 16:46:49 -0600 (MDT)
From: "Karl F. Larsen" <k5di@zianet.com>
To: Brian Kassel <bkassel@mato.com>
Cc: Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>
Subject: [130322] Re: Contest: CQC Goldrush - K7RE
Message-ID: <Pine.LNX.4.44.0207211644280.3440-1000000@Daisy.dog>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hi Brian, I scanned across 20 meter CW and heard just a couple of weak guys on my big beam, and went to 15 meters and heard NOTHING. At 4:00 PM

MST on 40 meters the band was long; short skip was out.

Turned off the radios.

On Sun, 21 Jul 2002, Brian Kassel wrote:

> Gangue:

>

> Wow, that was painful. Conditions were really rotten here, no other
> way to put it. Each QSO was a struggle, some more than others. I sure
> hope conditions weren't as bad for the rest of the country, but I'm
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>

> Sure hope conditions are better for the next one. Think I'll crack a
> Heineken ;)

>

> Brian K7RE

> Spearfish SD

> In the Black Hills

>

--

Yours Truly,

- Karl F. Larsen, (505) 524-3303 -

Date: Sun, 21 Jul 2002 18:48:09 EDT

From: Fghester@aol.com

To: qrp-l@lehigh.edu

Subject: [130323] Kenwood TS-50

Message-ID: <164.1102e52d.2a6c9429@aol.com>

MIME-Version: 1.0

Content-Type: text/plain; charset="US-ASCII"

Content-Transfer-Encoding: 7bit

Anyone know if the TS-50 can be limited to 5W RF power? easily? Thanks /

WD9F

End of QRP-L Digest 2623
